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25 June 1984

MEMORANDUM FOR: Information Systems Board Members

FROM: [redacted] 25X1
Executive Secretary to the Board

SUBJECT: Minutes of 25 May 1984 Meeting of the Information Systems Board

1. The Information Systems Board met on Friday, 25 May 1984. [redacted] 25X1
25X1

2. [redacted] asked for approval of the minutes of the 27 April 25X1
meeting. There were no additions or corrections. (U)

3. [redacted] ISRD/ORD/S&T and Working Group Chairman, 25X1
briefed the Board on Artificial Intelligence (AI) and summarized the Working Group's ten recommendations (attached).

4. [redacted] began the discussion by stating that, in his 25X1
opinion, the highest priority problem AI should address was the reduction, storage, and retrieval of the increased quantities of data that would soon deluge the Agency. [redacted] asked [redacted] how 25X1
difficult AI was to learn. [redacted] responded that CIA needs AI 25X1
engineers at the Master's level, not AI researchers at the PhD level, and that such training could be accomplished fairly easily. Additionally, he remarked, many Agency employees should have a general understanding of AI. [redacted] remarked that AI engineers with a 25X1
Master's degree command $80,000 starting salaries. Since we could not compete with such salaries, we would have to train our own people. While noting the obvious option of external contracting, Mr. Briggs cited the experience the Agency gained in training computer programmers when the nationwide dearth of programming skills forced it to develop its staff in-house in 1966. [redacted] 25X1

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SECRET

5. [redacted] suggested that a group was needed to transform AI research projects into working programs; he opined that ORD was not well suited to such a task. [redacted] seconded the need for a transition from laboratory and contractor to end user, and [redacted] agreed that such transitions had to be close to the end user to be most successful. [redacted] suggested that individuals within components should be trained to serve in this role, but that it was premature to establish AI centers beyond the planned ORD center. [redacted]

6. Returning to the subject of priorities, [redacted] suggested that developing intelligent interfaces to large databases would give better, quicker, and cheaper payoff than expert systems projects. [redacted] reiterated the need for data reduction projects. [redacted] commented that expert systems could be developed both to separate the wheat from the chaff and to retrieve information from databases by using the techniques expert analysts have developed. [redacted]

7. [redacted] briefly described the the Defense Advanced Research Projects Agency's (DARPA) one billion dollar effort on supercomputers and AI as briefed to the Community Information Handling Committee. Several Board members expressed interest in hearing the DARPA briefing, and [redacted] asked the Executive Secretary to arrange such a session. [redacted] briefly summarized ORD's proposal for an Agency supercomputer and commented that thought should be given to acquiring such devices if we are to use computer-intensive AI programs in the future. [redacted]

8. [redacted] expressed three concerns about encouraging increased Agency involvement in AI -- how to ensure that the money is available, how to decide which few areas warranted a large investment, and how to determine what areas were best left to industry to develop. He suggested that the areas of highest payoff for the Agency were not likely to be addressed commercially, but he wondered if DARPA could be persuaded to tackle such areas. He further suggested that time critical and "high people density, low productivity" jobs such as collection tasking and imagery interpretation, be attacked first. He commented that an expert system to code software might help ODP's applications backlog. [redacted] agreed that would be a high payoff system. [redacted] mentioned the need for expert systems in the analytic world as aides to Third World military analysts, noting that we are rapidly losing expertise in indications and warning analysis. [redacted]

9. In the general discussion of the value of AI to the Agency, [redacted] remarked that the high cost of AI projects was a major stumbling block to doing more. [redacted] commented that the Agency had to continue to hire "jaded cynics" to be sure that only the most necessary and profitable programs were proposed and funded. He suggested that the problems of information handling were not the need for higher processing rates but the need to retrieve the best information and understand it. [redacted] agreed. He added that coping with the projected tenfold increase, in the next ten

years, in information was first a major communications problem; then a problem of trying to make use of that much data with proportionately fewer people. [redacted] suggested that the Board needed to go further, perhaps charging the AI Working Group with more than being a discussion and coordination group. He suggested a change in the composition of the group. [redacted] 25X1 25X1

10. [redacted] reminded the Board that the Working Group had already been instructed to prepare long-term investment strategies for the Agency in the fields of image understanding, machine-assisted translation, and data reduction, storage and retrieval. Those strategies were due by November 1984. He suggested that some of the funding problems could be solved once those strategies had been approved by the Board and EXCOM and the components and Comptroller knew what projects needed to be protected for the sake of the long-term good. [redacted] 25X1 25X1

11. [redacted] next charged the Information Services Planning Working Group with including the need for AI projects and hardware in the guidelines that Group is preparing for the first Directorate long-range ADP plans. This charge is in keeping with Recommendation 8 in the attachment. He agreed that the basis for Recommendations 1 and 2 was valid -- the need for a few high priority expert system and natural language projects. He stressed that the few be focused on the priority problems. In discussing Recommendation 3 -- establishment of AI applications centers -- [redacted] suggested that individuals within components should be trained to handle the transfer of AI technology from research to the practical world, but that fully staffed centers were not yet needed. Recommendations 4 and 5, which charge ORD with continued efforts in AI, were also approved and ORD was urged to make the best possible use of AI research undertaken by other organizations. Regarding Recommendation 6, [redacted] said tha the members of the Board, including the Comptroller, should investigate what monies could be shifted in the FY 1985 and FY 1986 budgets to speed up OTE's AI training program. [redacted] stated that ODP was and would be getting more involved in AI as suggested in Recommendation 7. [redacted] also approved Recommendations 9 and 10, which call for improved coordination of AI efforts, tasking the AI Working Group with such coordination. He then asked if he should inform the directorates of these decisions; [redacted] responded that the Working Group would prepare a memorandum on this subject for his signature. [redacted] 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1

12. [redacted] then adjourned the meeting. The next meeting is scheduled for Friday, 29 June at 1330 hours in Room 7D64. The Computer Security Working Group will brief the Board on the RECON GUARD test and its draft Inter-Agency data sharing policy. (U) 25X1 25X1

[redacted]

Attachment

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[redacted]

25X1

RECOMMENDATIONS OF THE ARTIFICIAL INTELLIGENCE APPLICATIONS WORKING GROUP

(1) Concurrent with various offices' individual AI pursuits, the Information Systems Board should encourage the establishment of one or two major Expert Systems projects to serve as a focal point and a learning experience for the AI effort within the Agency.

(2) The Agency should begin now to develop robust natural language and question-answering interfaces to our most promising data base management systems.

(3) The Agency should begin to establish an AI infrastructure for evaluating, applying, and using artificial intelligence technology. As a part of this infrastructure, interested offices should be encouraged to establish their own AI technology transfer centers, working closely with each other and with ORD's AI Center.

(4) CIA, and specifically ORD, should continue to work closely with the Defense Advanced Research Projects Agency (DARPA) to establish and maintain a strong relationship for specifying our AI requirements and for transferring the results of DARPA-sponsored basic AI research to meet the Agency's specific needs.

(5) ORD should continue to build upon basic research sponsored by DARPA, the Office of Naval Research (ONR), and the National Science Foundation (NSF), among others, by maintaining long-range applied research programs in the areas of knowledge engineering and machine perception, the latter to include: Image Understanding, Speech Understanding, Signals Understanding, and Natural Language Understanding.

(6) OTE should be encouraged to hasten the establishment of an AI training program to include a curriculum of internal AI training courses, arrangements for special training programs with universities and AI institutes, and a local AI training facility (with AI hardware and software).

(7) ODP, along with other system development components, should be encouraged to experiment with and incorporate selected AI programming tools to enhance the productivity of software developers.

(8) Agency information systems planners should begin now to size and plan for the increased computing capacity which will be required in the future to support AI applications in our operational systems. A task force should be established to develop a methodology for more accurately predicting the size and resource requirements of proposed AI applications.

(9) The Agency should work with the Community's AI Steering Group to establish an AI Advisory Board of nationally renowned experts in AI to advise on the selection of promising AI technologies and the development of successful Agency applications.

(10) The AI Applications Working Group should continue to function as the principal means of information exchange and coordination of the Agency's AI activities.